PM/P/P Cores Halves/EP/TT/PR Cores

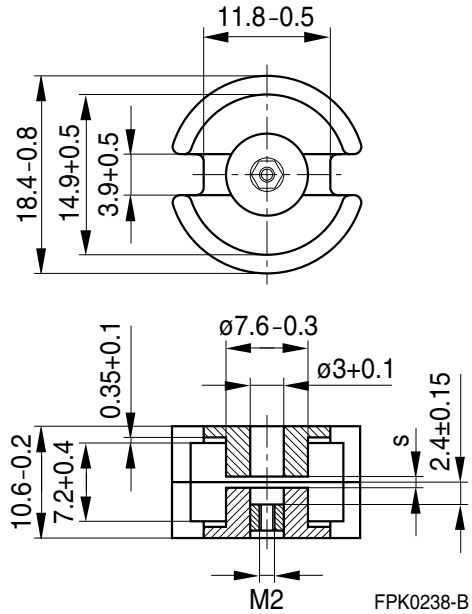
Series/Type: P 18 x 11

The following products presented in this data sheet are being withdrawn.

Ordering Code	Substitute Product	Date of Withdrawal	Deadline Last Orders	Last Shipments
B65659F0001X001	B65659F1X23	11.11.2005	30.04.2006	30.06.2006

For further information please contact your nearest EPCOS sales office, which will also support you in selecting a suitable substitute. The addresses of our worldwide sales network are presented at www.epcos.com/sales.

- To IEC 60133
- Delivery mode: sets



Magnetic characteristics (per set)

	with center hole	without center hole	
$\Sigma l/A$	0.6	0.57	mm^{-1}
l_e	25.9	26.6	mm
A_e	43	46.7	mm^2
A_{min}	—	33.9	mm^2
V_e	1114	1242	mm^3

Approx. weight (per set)

m	6.0	6.6	g

Gapped

Material	A_L value nH	s approx. mm	μ_e	Ordering code [1] -D with center hole -T with threaded sleeve
K1	40 ±3%	1.60	19	B65651+0040A001
M33	100 ±3%	0.60	48	B65651+0100A033
N48	160 ±3%	0.32	77	B65651+0160A048
	250 ±3%	0.20	120	B65651+0250A048
	315 ±3%	0.15	151	B65651+0315A048
	400 ±3%	0.10	192	B65651+0400A048
	500 ±3%	0.07	240	B65651+0500A048
	630 ±5%	0.05	302	B65651D0630J048

Ungapped

Material	A_L value nH	μ_e	P_V W/set	Ordering code -D with center hole -W without center hole
N48	2800 +30/–20%	1340		B65651D0000R048
N30	5900 +30/–20%	2680		B65651W0000R030
T38	12600 +40/–30%	5710		B65651W0000Y038
N87	3600 +30/–20%	1630	< 0.46 (200 mT, 100 kHz, 100 °C)	B65651W0000R087

1) Replace the + by the code letter ”D“ or ”T“ for the required version.

Coil former

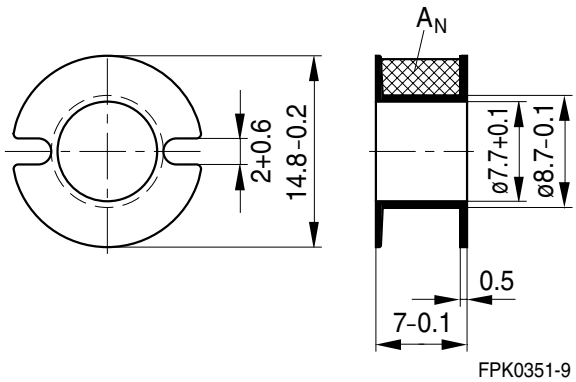
Standard: to IEC 60133
Material: GFR polyterephthalate (UL 94 V-0, insulation class to IEC 60085: F ≙ max. operating temperature 155 °C), color code black Valox 420-SE0® [E45329 (M)], GE PLASTICS B V
Winding: see Data Book 2007, chapter “Processing notes, 2.1”

Insulating washer between core and coil former

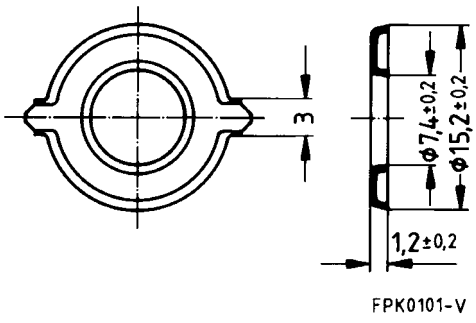
- For tolerance compensation and for insulation
- Polycarbonate spring washer (UL 94 V-0, insulation class to IEC 60085: E ≙ 120 °C), 0.08 mm thick Aryphan F685, [E167358 (M)], natural color, LOFO HIGH TECH FILM GMBH

Coil former				Bestellnummer
Sections	A_N mm²	l_N mm	A_R value μΩ	
1	16	35.6	87	B65652B0000T001
Insulating washer (reel packing, PU = 1 reel)				B65652A5000X000

Coil former



Insulating washer
(preliminary data)



Mounting assembly for printed circuit boards

- The set comprises a terminal carrier and a yoke
- For snap-in connection

Terminal carrier

Material: GFR polyterephthalate (UL 94 V-0, insulation class to IEC 60085: F ≙ max. operating temperature 155 °C), color code gray Pocan B4235® [E245249 (M)], LANXESS AG

Solderability: to IEC 60068-2-20, test Ta, method 1 (aging 3): 235 °C, 2 s

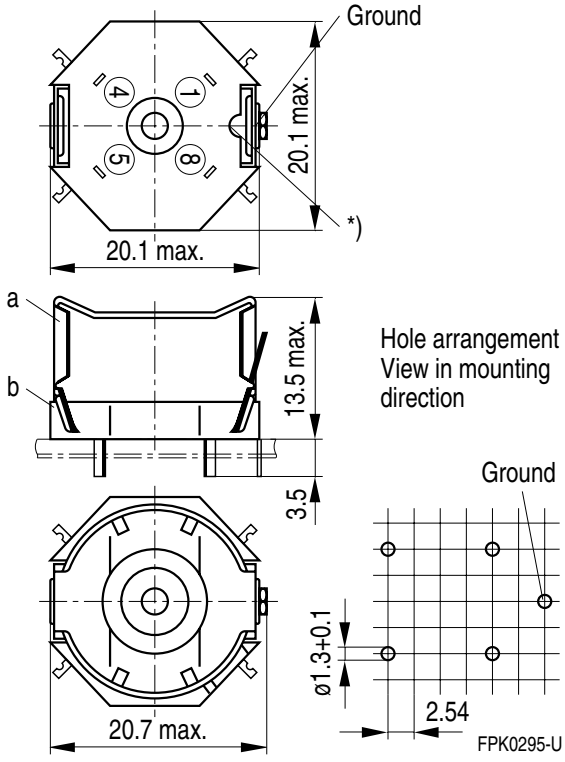
Resistance to soldering heat: to IEC 60068-2-20, test Tb, method 1B: 350 °C, 3.5 s

Yoke

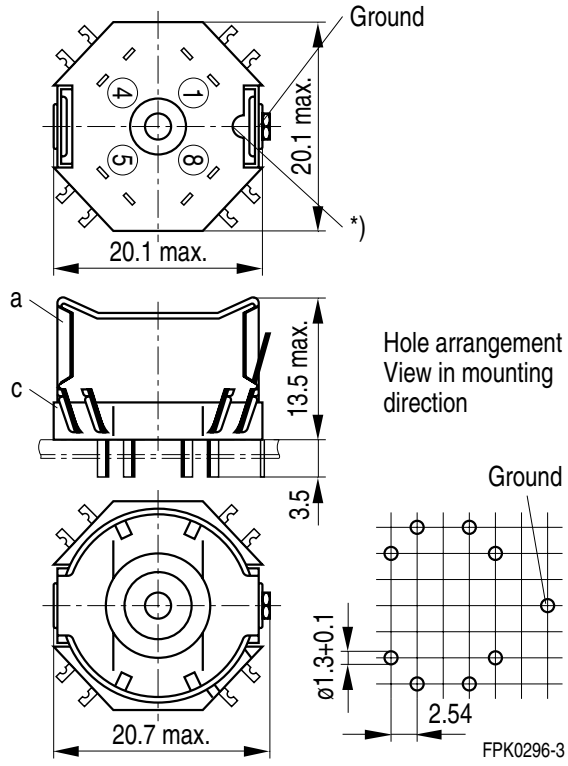
Spring yoke, made of tinned nickel silver (0.3 mm), with ground terminal

Complete mounting assembly (4 solder terminals) Ordering code: B65655B0009X000	Complete mounting assembly (8 solder terminals) Ordering code: B65655B0010X000

4 solder terminals



8 solder terminals



*) This recess must be on the side of the grounding pin to ensure that the yoke locks in position.

a) Yoke

b) Terminal carrier with 4 solder terminals

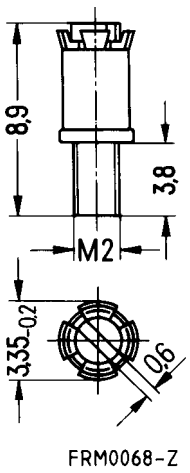
c) Terminal carrier with 8 solder terminals

Adjusting screw

- Tube core with thread and core brake made of GFR polyterephthalate Pocan B3235® [E245249 (M)], LANXESS AG

Figure	Tube core ∅ × length (mm)	Material	Color code	Ordering code
a	2.62 × 3.6	K1	green	B65659F0001X001
a	2.62 × 3.6	N22	red	B65659F0001X023
b	2.75 × 4.4	N22	black	B65659F0003X023
c	2.82 × 4.4	N22	yellow	B65659F0004X023

a



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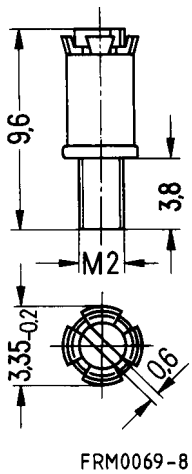
b



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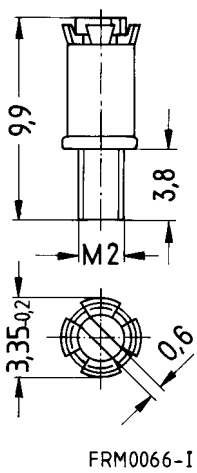
c



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Mechanical stress and mounting

Ferrite cores have to meet mechanical requirements during assembling and for a growing number of applications. Since ferrites are ceramic materials one has to be aware of the special behavior under mechanical load.

As valid for any ceramic material, ferrite cores are brittle and sensitive to any shock, fast changing or tensile load. Especially high cooling rates under ultrasonic cleaning and high static or cyclic loads can cause cracks or failure of the ferrite cores.

For detailed information see Data Book 2007, chapter “General – Definitions, 8.1”.

Effects of core combination on A_L value

Stresses in the core affect not only the mechanical but also the magnetic properties. It is apparent that the initial permeability is dependent on the stress state of the core. The higher the stresses are in the core, the lower is the value for the initial permeability. Thus the embedding medium should have the greatest possible elasticity.

For detailed information see Data Book 2007, chapter “General – Definitions, 8.2”.

Heating up

Ferrites can run hot during operation at higher flux densities and higher frequencies.

NiZn-materials

The magnetic properties of NiZn-materials can change irreversible in high magnetic fields.

Processing notes

– The start of the winding process should be soft. Else the flanges may be destroid.
– To strong winding forces may blast the flanges or squeeze the tube that the cores can no more be mount.
– To long soldering time at high temperature (>300 °C) may effect coplanarity or pin arrangement.
– Not following the processing notes for soldering of the J-leg terminals may cause solderability problems at the transformer because of pollution with Sn oxyd of the tin bath or burned insulation of the wire. For detailed information see Data Book 2007, chapter “Processing notes, 2.2”.
– The dimensions of the hole arrangement have fixed values and should be understood as a recommendation for drilling the printed circuit board. For dimensioning the pins, the group of holes can only be seen under certain conditions, as they fit into the given hole arrangement. To avoid problems when mounting the transformer, the manufacturing tolerances for positioning the customers’ drilling process must be considered by increasing the hole diameter.

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